The following listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Presently Amended) A spray-pyrolysis ~~Spray-pyrolysis~~ or spray-drying plant, ~~characterized in that, in~~ a plant which is constructed vertically or horizontally, comprising:

a) a reaction tube (1) ~~is~~ accommodated ~~in~~ within an outer tube (2) of heat-resistant steel sheeting in such a way that an annular space is formed between the two tubes, ~~where~~

b) an atomization system (3) ~~is~~ located at one end of the tubes and a ~~the~~ gas outlet (4) ~~is~~ located at the opposite end of said tubes , ~~whereas~~

c) one or more jacket connectors (5) which lead into ~~the~~ said annular space, optionally at the height of the atomization system or distributed over the length of the plant, and

d) optionally ~~if desired~~, gas inlet slots or nozzles (6) and (7), optionally ~~under certain circumstances also~~ in the form of a gas burner, at the height of the atomization system which lead into ~~the~~ said reaction tube.

2. (Presently Amended) A spray-pyrolysis ~~Spray-pyrolysis~~ or spray-drying plant according to Claim 1, wherein said ~~characterized in that the~~ reaction tube consists of a heat-resistant, porous material.

3. (Presently Amended) A spray-pyrolysis ~~Spray-pyrolysis~~ or spray-drying plant according to Claim 1, wherein said ~~characterized in that the~~ reaction tube consists of a porous material which is heat-resistant up to 1200°C and in which ~~has a~~ the pore diameters are ~~of from~~ 1 to 5 µm.

4. (Presently Amended) A spray-pyrolysis ~~Spray-pyrolysis~~ or spray-drying plant according to Claim 2, wherein said ~~1, characterized in that~~ heat-resistant, porous material is selected from ~~consists of~~ heat-resistant metal alloys ~~or suitable~~ and ceramic materials.

5. (Presently Amended) A spray-pyrolysis ~~Spray-pyrolysis~~ or spray-drying plant according to Claim 1, wherein said ~~characterized in that the~~ reaction tube consists of heat-

resistant sintered metal, metal mesh or metal non-woven media.

6. (Presently Amended) A spray-pyrolysis ~~Spray-pyrolysis~~ or spray-drying plant according to Claim 1, wherein said ~~characterized in that the~~ atomization system consists of a nozzle plate to which ~~the~~ atomization energy is transferred by means of a piezoceramic oscillator.

7. (Presently Amended) A spray-pyrolysis ~~Spray-pyrolysis~~ or spray-drying plant according to Claim 6, wherein said ~~characterized in that the~~ nozzle plate has holes having a diameter of from 10 to 40 µm.

8. (Presently Amended) A reaction ~~Reaction~~ tube consisting of a gas-permeable, porous material which is heat-resistant up to 1200°C and has a pore diameter of from 1 to 5 µm.

9. (Presently Amended) A spray-pyrolysis ~~Spray-pyrolysis~~ or spray-drying process, comprising:

introducing ~~characterized in that~~ gas ~~is passed~~ through a jacket connector (5) into an annular space formed by a reaction tube (1) made of porous material and an outer tube (2), whereby the introduced gas flows through ~~the~~ said porous material of ~~the~~ said reaction tube into the reaction space within said reaction tube, resulting in the formation of a gas stream away from the ~~jacket~~ surface of said reaction tube, which prevents deposition of formed particles on ~~the~~ said surface.

10. (Presently Amended) A spray-pyrolysis ~~Spray-pyrolysis~~ or spray-drying process, comprising: ~~characterized in that~~

introducing a solution or suspension of a metal salt or a mixture of metal salts or a metal salt solution which comprises suspended, insoluble particles of a metal-containing compound, ~~for example metal oxides~~ in finely divided form, ~~is introduced~~ into a reaction tube (1), in the desired stoichiometric ratio, by means of an atomization system (3), consisting of a nozzle plate, to which the atomization energy is transferred by means of a piezoceramic

oscillator, ~~in finely divided form in the form of a monodisperse spray into the reaction tube (1)~~, where ~~it~~ said solution or suspension encounters a pre-heated gas flowing in through ~~the~~ a porous wall of ~~the~~ said reaction tube; and

said solution or suspension is ~~either~~ dried in the gas stream to form a powder having a uniform particle size distribution and ~~is~~ discharged at the end of the reaction tube together with the gas stream, or

said solution or suspension is ~~caused~~ to decomposed or reacted in the gas stream by supply of additional process energy, ~~where the reaction may be exothermic,~~ and the resultant formed particulate product ~~formed~~ is discharged at the end of the reaction tube together with the gas stream.

11. (Presently Amended) A process ~~Process~~ according to Claim 9, wherein ~~characterized in that~~ the wall of the reaction tube is cooled constantly during ~~the~~ exothermic reaction by the gas passing through from the outside.

12. (Cancelled)

13. (Presently Amended) A process ~~Process~~ according to Claim 9, ~~characterized in that~~ wherein additional process energy is supplied by burning a gas with an oxidant, ~~where either~~ wherein

the air is supplied from the outside via the jacket connector (5) and the gas is added from the inside via gas connectors and inlet slots (6) and (7), or

the gas is added from the outside (5) and the air is added from the inside via gas connectors and inlet slots (6) and (7), or

the air supplied via the jacket connector (5) is electrically heated, flows through the porous wall and reacts exothermically with the stream of fuel gas added via the gas connector and inlet slots (6) and (7) and increases the reaction temperature.

14. (PresentlyAmended) A process ~~Process~~ according to Claim 9, ~~characterized in that~~ wherein powder materials having an average particle size of from 0.1 to 10 µm are obtained.

15. (Presently Amended) A process ~~Process~~ according to Claim 9, ~~characterized in that~~ wherein the powder materials obtained do not comprise hard agglomerates.

16. (Presently Amended) A process ~~Process~~ according to Claim 9, ~~characterized in that~~ wherein the molecular weight fraction of any desired component of the powder material obtained differs by a maximum of 1.5% compared with the corresponding molecular weight fraction in the precursor solution, based on the corresponding molecular weight fraction in the precursor solution.

17. (New): A spray-pyrolysis or spray-drying plant, comprising:

a) a reaction tube (1) accommodated within an outer tube (2) of heat-resistant steel sheeting whereby an annular space is formed between the two tubes,

b) an atomization system (3) located at one end of the tubes and a gas outlet (4) located at the opposite end of the tubes,

c) one or more jacket connectors (5) which lead into the annular space, and

d) optionally, gas inlet slots or nozzles (6) and (7), which lead into the reaction tube,

wherein said reaction tube is a reaction tube according to claim 8.

18. (New) A spray-pyrolysis or spray-drying process, comprising performing said process in a plate according to claim 1, wherein gas is passed through a jacket connector (5) into said annular space formed by said reaction tube (1), which is made of heat-resistant, porous material, and said outer tube (2), said gas flows through the porous material of said reaction tube into the reaction space within said reaction tube, resulting in the formation of a gas stream flowing away from the reaction tube inner surface, which prevents deposition of formed particles on said inner surface.

19. (New) A spray-pyrolysis or spray-drying process, comprising:

introducing a solution or suspension of a metal salt or a mixture of metal salts or a metal salt solution which comprises suspended, insoluble particles of a metal-containing compound, in finely divided form, into a reaction tube (1), in the desired stoichiometric ratio,

by means of an atomization system which comprises one or more single or multi-component nozzles, where said solution or suspension, where said solution or suspension encounters pre-heated gas flowing in through a porous wall of said reaction tube; and

said solution or suspension is dried in the gas stream to form a powder having a uniform particle size distribution and ~~is~~ discharged at the end of the reaction tube together with the gas stream, or

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said solution or suspension is to decomposed or reacted in the gas stream by supply of additional process energy, and the resultant formed particulate product is discharged at the end of the reaction tube together with the gas stream.